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UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE
Division of Forest Insect Investigations

SUMMARY OF THE MORE IMPORTANT DEFOLIATOR CONDITIONS IN THE NORTHERN ROCKY MOUNTAINS IN 1953

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SUMMARY OF THE MORE IMPORTANT DEFOLIATOR CONDITIONS IN THE NORTHERN ROCKY MOUNTAINS IN 1953 1/

SPRUCE BUDWORM (Choristoneura fumiferana (Clem.))

The spruce budworm is the most destructive and widespread defoliator in the northern Rocky Mountains. No Douglas or true fir stand in the region is entirely free of this insect, although its status is endemic in many forests west of the Continental Divide in Montana.

The present series of outbreaks have been developing for the past five years and, together, they are the largest and most damaging of the several outbreaks that have occurred during the past 30 years in this region. In 1953 budworm conditions in the northern Rockies were characterized by 1) a continued increase in the total area of infestation, 2) a marked increase in population densities and severity of current defoliation in nearly all infested forests, and 3) a reduction in the total acreage of heaviest defoliation by aerial spraying.

A summary of budworm conditions is presented in Table 1. The total acreage of infested Douglas-fir and true fir forests, exclusive of that which was sprayed, amounted to 2,100,700 acres, compared with 1,901,000 acres in 1952. Nine national forests and one national park are included in this total, as well as several hundred thousand acres of infestation on public domain, state, and private lands.

Several new outbreaks were discovered in Montana during the aerial budworm survey of the region. In the history of the budworm in the northern Rockies, no infestation has ever been reported within the Tobacco Root Mountains; in 1953, however, visible defoliation extended along the eastern and northern faces of the mountain range. Other new areas include the western slope of the Crazy Mountains and the northern face of the Absaroka Mountain Range within the Gallatin National Forest.

The 1953 aerial and ground surveys indicated a considerable increase in population densities and resultant defoliation compared to 1952. This increase was reflected in the total acreage of moderate damage (143,500 acres), which is double that of last year, as well as the additional 200,000 acres of total area of visible defoliation. In some localities, even though defoliation has not been visible as yet, moth flights have been in evidence. The University of Idaho reported that many budworm moths were attracted to their newly developed, black-light traps, although the closest area of visible defoliation is Craig Mountain - 50 miles distant. Similarly, budworm moths were observed across the entire northern end of Yellowstone National Park, even though visible damage was limited to 22,000 acres in the northwestern corner.

1/ Compiled by Robert E. Denton, Entomologist

During July 1953 a total of 135,000 acres of fir forests were sprayed from the air to control the budworm in areas where large, continuous blocks of timber had suffered severe defoliation. As is shown in Table 1, the total area of heavy damage was reduced to 52,800 acres, distributed within the various forests in relatively small amounts. The largest blocks of heavy damage were found in the Craig Mountain Area, Idaho, in the Gravelly Range of the Beaverhead National Forest, and in the Bridger Range of the Gallatin National Forest.

Table 1. Acreage of 1953 spruce budworm infestations, by degree of damage, in the northern Rocky Mountains.

Forest	Total Acreage	Degree of Damage		
		Light	Moderate	Heavy
IDAHO				
Nezperce Nat'l. For.	42,600	42,600		
Nezperce Co. (Craig Mtn.)	138,400	126,000	5,800	6,600
Lolo Nat'l. For. (Powell Dist.)	80,400	73,100	2,300	5,000
Sub-Totals	261,400	241,700	8,100	11,600
MONTANA				
Lolo Nat'l. For. (Bonita Dist.)	48,400	44,600	3,800	
Bitterroot Nat'l. For.	140,300	128,200	8,400	3,700
Garnet Mtn. Range	195,100	190,000	5,100	
Flathead Nat'l. For.	59,900	53,800	4,100	2,000
Helena Nat'l. For.	565,500	523,600	35,500	6,400
Deerlodge Nat'l. For.	269,600	245,500	20,800	3,300
Beaverhead Nat'l. For.	31,600	24,900	1,300	5,400
Gallatin Nat'l. For.	304,500	262,300	35,100	7,100
Yellowstone Nat'l. Park	22,000	8,200	8,400	5,400
Lewis & Clark Nat'l. For.	202,400	181,600	12,900	7,900
Sub-Totals	1,839,300	1,662,700	135,400	41,200
TOTALS	2,100,700	1,904,400	143,500	52,800

GREEN-STRIPED FOREST LOOPER (Melanolophia imitata (Wlk.))

For the past three years the green-striped forest looper has been in epidemic status on several hundred thousand acres in and adjacent to the St. Joe National Forest east of Moscow, Idaho. Grand fir has suffered the most damage from repeated attacks, although feeding has occurred on Douglas-fir, western hemlock, and western cedar.

Only one previous outbreak of this insect has been recorded in the region. In 1946 and 1947 populations of this looper increased to epidemic status on the North Fork Clearwater River, Idaho. The outbreak subsided abruptly, before serious damage occurred to the host trees.

The 1953 survey indicated that the present outbreak might follow a pattern similar to that of the earlier one. Defoliation was confined mainly to creek bottoms, whereas in 1952 the visible damage was widespread throughout the area. Although no tree mortality has occurred as yet, top killing of grand fir was evident in several localized areas.

FOREST TENT CATERPILLAR (Malacosoma disstria Hbn.)

During the past three years scattered, spot infestations of the forest tent caterpillar have increased greatly in eastern Washington and northern Idaho. The principal hosts have been stream-bank species such as alder and willow, although groves of aspen and birch have been completely defoliated. One coniferous species, western larch, has been fed upon in some areas.

Few instances of tree mortality have been observed, owing to the ability of broad-leaved trees to withstand repeated defoliation for several years. Individual infestations have been characterized by mass migrations of caterpillars, after an area has been stripped of foliage, which have caused considerable discomfort to property owners. In some instances entire walls of buildings have been covered with a solid mat of thousands of caterpillars. Otherwise the economic damage has not been great.